

Stigmella carpinella (Heinemann, 1862)
(Lep.: Nepticulidae): A Species New to Britain

By A. M. EMMET*

In a recent paper (Emmet, 1976), I recounted how certain specimens in the W. H. B. Fletcher collection at Cambridge University led to a new species, *Stigmella auritella* (Skala), being added to the British list. My present task is to relate the discovery of another species, also new to Britain, emanating from the same source.

Fletcher reared a large number of Nepticulidae from mines on hornbeam (*Carpinus betulus*) taken in Ashdown Forest, Sussex. These, as one would expect, included *Stigmella floslactella* (Haworth) and *S. microtheriella* (Stainton); but he separated from them a third group which he labelled “? *carpinella* Heinemann”. The series looked rather a “mixed bag”, but as in some instances, at any rate, Fletcher's determinations seemed likely to prove correct, a male was dissected and the slide, together with the specimen, was sent to Dr. J. Klimesch in Austria for his opinion. Through some unfortunate accident, the aedeagus became detached and lost in the mounting of the genitalia and consequently Dr. Klimesch could say no more than that the specimen might be *S. carpinella*. So at my request the Department of Zoology sent Dr. Klimesch a second consignment of undissected specimens. Again there was trouble: this time the package suffered damage in the post. However, Dr. Klimesch found a loose abdomen and after dissecting it and drawing the genitalia gave his opinion that the moth was not *S. carpinella*, but might be a hitherto unnamed species which the late Danish authority, A. G. Carolsfeld-Krausé, suspected to occur on hornbeam. Dr. Klimesch sent me figures of the genitalia of the Cambridge specimen and also of *S. carpinella* drawn from an Austrian example. I have already referred to these events (Heath *et al.*, 1976: 232).

Since it seemed that a gremlin was interfering with my efforts to get the Fletcher specimens positively identified and I felt too embarrassed to worry either the Department of Zoology or Dr. Klimesch any further, I deemed it best to start afresh with my own material. Non-entomological commitments prevented me from collecting first-generation mines in hornbeam in 1975, but in the late summer and autumn I was less involved. On the 12th September, when at Ham Street, East Kent with E. C. Pelham-Clinton and D. W. H. Fennell, I found two tenanted mines and the others one each. Later, on 10th October, I took upwards of a score of tenanted mines at Lullingstone, West Kent. In the spring of 1976 my Ham Street mines produced one *S. floslactella* and one ♀ of the new species and Pelham-Clinton reared a ♂ of the latter. The Lullingstone material resulted in ten adults, five of each species, both sexes being represented. On 11th May, 1976, I took a further example of the new moth resting on a hornbeam trunk in Abbots Wood, East Sussex.

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Dr. J. D. Bradley kindly dissected the genitalia of one of my male specimens from Lullingstone and found they corresponded with Dr. Klimesch's figure of *S. carpinella*. This establishes *S. carpinella* as a resident British species, but leaves the problem unsolved of the genitalia dissected by Dr. Klimesch. I have looked again at Fletcher's series, and most at any rate, appear to me to be conspecific with my bred specimens, but the possibility remains that another, apparently unnamed, species is mixed with them. If collectors who are interested in the Nepticulidae turn their attention to mines on hornbeam, this species, if it exists, should come to light.

On the present rather meagre evidence, it seems that *S. carpinella* and *S. floslactella* occur in about equal numbers on hornbeam, though the latter, of course, feeds far more commonly on hazel. *S. microtheriella*, which is equally partial to the two foodplants, easily outnumbers the other two put together. At present, *S. carpinella* is recorded only from Kent and Sussex (vice-counties 14, 15 and 16), but may well also occur in adjacent counties where hornbeam is established.

At the time of my collection, I noticed no difference between the larvae and mines of what I was later to learn to be two distinct species. Below I give the marks of distinction as stated by Hering (1957). Judging from the mixed series of mines in my herbarium, I am doubtful whether Hering's characters are sufficiently constant and positive for identification purposes.

The main credit for adding this species to the British list goes to Fletcher. It is a pity that his diffidence dissuaded him from publicly announcing a new British species which he had determined correctly, but it must be remembered that at the end of the last century the amateur had few facilities to help him solve his problems. When Stainton was alive, questions could be referred to him, but after his death there was a hiatus until the British Museum (Natural History) acquired its important reference collections, and its well informed and helpful team of specialists.

S. carpinella belongs to the *floslactella* group and should be placed immediately after that species. It may be fitted into the "Key to species (imagines) of the Nepticulidae" (Heath *et al.*, 1976: 179 col. 1) as follows:—

After 1.16 add,

35(a) Fascia golden yellow, sharply defined.....*S. carpinella*

Fascia otherwise.....35(b)

in 1.17 add (b) after 35.

S. carpinella is the second species new to Britain to be announced after study of the somewhat neglected collections housed at the University of Cambridge; a third will follow in due course. It may well be that specialists in the other families of microlepidoptera will find a visit to the insect room of the Department of Zoology equally rewarding.

My thanks are due to Dr. J. Smart and Dr. W. A. Foster for giving me access to the collections at Cambridge, to Dr. J. Klimesch for advice and the relevant figures of genitalia, and to Dr. J. D. Bradley for the dissection of specimens.

Description

Stigmella carpinella (Heinmann, 1862)

Imago. Wingspan 5-6mm. Head and collar yellow, antennae in male long, reaching beyond fascia, in female shorter; eyecaps yellowish white. Forewing dark fuscous brown; a sharply defined direct or slightly outwardly oblique golden yellow fascia beyond middle; apical area with faint violet reflections; cilia, beyond a line of dark-tipped scales, whitish grey, darker on tornus. Hindwing and cilia pale grey. Can be distinguished from *S. floslactella* by the longer antennae in the male and the uniform dark fuscous brown coloration of the basal half of the forewing.

Ovum. Laid on the underside of a hornbeam (*Carpinus betulus*).

Larva. Similar to that of *S. floslactella*.

Mine. An irregular gallery, distinctly widening at its end; frass deposited in thick heaps (Hering, 1957).

Cocoon. Similar to that of *S. floslactella*, but more yellow.

Life history. Bivoltine. The adults fly in May and August and the larvae feed from June to July and again from September to October.

Distribution. Local in Kent and Sussex, but possibly occurring wherever hornbeam is well established in south-east England. Abroad it is found in central and northern Europe.

References

- Emmet, A. M., 1976. *Stigmella auritella* (Skåla) (Lep.: Nepticulidae) A Species new to Britain. *Ent. Rec.*, **88**: 105-109.
 Heath, J. et al., 1976. *The Moths and Butterflies of Great Britain and Ireland*, Vol. I, 343 pp., 13 pl. London.
 Hering, E. M., 1957. *Bestimmungstabellen der Blattmineren von Europa*, 1 and 3. S²-Gravenhage.

HETEROGRAPHIS OBLITELLA Z. PLENTIFUL IN S.E. LONDON, 1976—In response to Dr. Watkinson's appeal for further records of this Phycitid (*antea*: 334), I can report that it was remarkably common here at Charlton during the year just passed. For the immediate environs of London, my own captures at Blackheath, 2½ miles to the south-west, are the only ones I am aware of; the first alone was published (1960, *Ent. Rec.*, **72**: 135), but a few more singletons appeared at intervals in the next decade. That being so, the relatively high numbers—say about a dozen on a good night—that came to light between late June and late August last were a surprise indeed. Though most of them appeared at m.v.l., a few were attracted to the ordinary house lights; but it was never found at rest in the daytime. From the insect's known habits I would guess that it was breeding on some rough ground in the vicinity of the Thames less than a mile away. Unfortunately, I can say nothing of its incidence here during the previous two years since moving from Blackheath, as the lamp was not then in use. — A. A. ALLEN, 49 Montcalm Road, Charlton, London, SE7 8QG.